

**Amendments to the Drawings:**

The attached sheet of drawings includes changes to Figs. 7 and 8. This sheet, which includes Figs. 6-8, replaces the original sheet including Figs. 6-8. In Figure 7, reference number 15 has been changed to 15'. In Figure 8, an additional reference number 110 has been added.

**Attachment:**

Replacement Sheet

## **REMARKS/ARGUMENTS**

### **Summary of the Examiner's Actions**

The examiner objected to Claims 1, 2, 4, 8, 15, 16, 20, 26, 28 and 32 because the informalities associated with the recitation of "charge particle detector" instead of "charged particle detector" is noted. Appropriate correction has been requested. In this regard Claims 1, 2, 15, 25 and 26 have been amended in order to, among other things, make the requested correction. Claims 4, 8, 16, 20, 28 and 32 have been cancelled. The examiner's objection to Claims 9, 21 and 33 due to certain informalities is noted. Claims 9, 21 and 33 have been cancelled.

The examiner rejected Claims 8, 9, 13, 20, 21, 32, 33 and 37 under 35 U.S.C. § 112, first paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. Applicant acknowledges the rejection under 35 U.S.C. § 112, first paragraph. In this regard, the Examiner contends that these claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains to make and/or use the invention. The Examiner contends that these claims are directed towards Figure 8 and that it is not clear how the detector functions and whether or not there are two separate p-n junctions. As stated above, Claims 9, 21 and 33 have been cancelled.

In response, it is respectfully noted that the subject matter of Claim 8, namely defining the solid state charged particle detector as having a first electrode disposed on a first side of the base and a second electrode of disposed on a second side of the base in spaced relation from the first side of said base, has been amended into Claim 1. Similar limitations have been added by way of amendment to independent Claims 14 and 25. Claim 13, which merely defines the materials from which the base can be fabricated, has been amended to depend from claim 1, the independent base claim. With regard to newly amended independent Claims 1, 14 and 25, it is respectfully submitted that these claims are not solely directed towards the embodiment illustrated in Figure 8, though they would read on that embodiment. Rather, these claims pertain to Figures 5-7. With regard to the window, the window is defined by the narrow dimension of the base material between the electrode and the microfluidic

channel. As discussed in the specification, at paragraph 33, the window is defined as the portion of the base that is disposed between the microfluidic channel and the solid-state charge particle detector which is dimensioned so as to allow transmission of beta particles there through. With regard to the question of enablement, it is respectfully submitted that one skilled in this art, would readily recognize from the specification and the drawings, how to make and use the present invention and, specifically, the invention claimed in independent Claims 1, 14 and 25. Accordingly, the Examiner is respectfully requested to withdraw this rejection.

The examiner rejected Claims 1, 7, 10, 12, 25, 31, 34 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,379,929 ("the '929 patent"), issued to Burns et al.. Applicant acknowledges the rejection under 35 U.S.C. § 102(b).

The examiner rejected Claims 1-7, 10-12, 14-19, 22-31 and 34-36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,214,191 ("the '191 patent"), issued to Wiktorowicz et al., in view of Tokita et al and Karmen. With regard to Tokita, the examiner notes that the description of Tokita et al is based "in part on a partial oral translation" which has not been transcribed and which does not appear to be complete. The Examiner is requested to withdraw. The examiner has not provided any transcription of this "oral translation". The examiner is respectfully requested to provide a complete translation if the Examiner continues to rely upon the Tokita reference. Applicant acknowledges the rejection under 35 U.S.C. § 103(a).

### **Objections to the Claims**

It is respectfully submitted that the Examiner's objections to the claims have been addressed in the discussion above and have been traversed.

### **Rejections under 35 U.S.C. § 112, first paragraph**

As discussed above, it is respectfully submitted that the examiner's rejections under 35 U.S.C. § 112, first paragraph, have been traversed.

Accordingly, Applicant respectfully requests that the examiner withdraw the rejections under 35 U.S.C. § 112, first paragraph.

#### **Rejections under 35 U.S.C. § 102(b)**

Section 2131 of the Manual of Patent Examining Procedure describes the basis for anticipation under 35 U.S.C. § 102. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

Claims 1, 14 and 25 are the only remaining independent claims. Each of these claims has been amended to recite that the solid-state charged particle detector supported by the base has a first electrode of the solid-state charged particle detector disposed on a first side of the base and a second electrode of the solid-state charged particle detector disposed on a second side of the base in spaced relation from the first side of the base, (subject matter which was originally presented in Claims 8, 20 and 32). This arrangement of the electrodes of the solid-state charged particle detector is illustrated primarily in Figures 5-7 as discussed above. It is respectfully submitted that Burns et al. do not teach or suggest this arrangement of electrodes in the detector. In this regard, it is specifically noted that neither claims 8, 20 or 32 were rejected by the Examiner under 35 U.S.C. §102.

Accordingly, it is respectfully submitted that Burns et al. do not anticipate Claims 1, 14 and 25 and that the examiner's rejections under 35 U.S.C. § 102(b) have been traversed.

Accordingly, Applicant respectfully requests that the examiner withdraw the rejections under 35 U.S.C. § 102(b).

### Rejections under 35 U.S.C. § 103(a)

In order to support a rejection under 35 U.S.C. § 103(a), “the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP § 2142, pg. 2100-121, 8th ed. “To reach a proper determination under 35 U.S.C. § 103(a), the examiner must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made.” *Id.* The first element in establishing a *prima facie* case of obviousness is that “there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings.” MPEP § 2143, pg. 2100-122, 8th ed. The second element is that there “must be a reasonable expectation of success.” *Id.* The third element is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” *Id.*

The relevant facts for finding obviousness relate to (1) the scope and content of the prior art, (2) the level of ordinary skill in the field of the invention, (3) the differences between the claimed invention and the prior art, and (4) any objective evidence of nonobviousness such as long felt need, commercial success, the failure of others, or copying. *Graham v. John Deere Co.*, 148 U.S.P.Q. 459, 467 (1966; see *Continental Can Co. v. Monsanto Co.*, 20 U.S.P.Q.2d 1746, 1750-51 (Fed. Cir. 1991). The Supreme Court in *Graham* stated that “the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.” *Graham*, 383 U.S. at 17, 148 U.S.P.Q. at 467. The *Graham* court further stated that “[s]uch secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.” *Id.*

It is respectfully submitted that even if a person skilled in the art were to combine the cited references, namely Wiktorowicz et al in view of Tokita et al and Karmen, in the manner suggested by the Examiner, one would not have a detector assembly in which the solid-state charged particle detector supported by the base has a first electrode of the solid-state charged particle detector disposed on a first side of

the base and a second electrode of the solid-state charged particle detector disposed on a second side of the base in spaced relation from the first side of the base, (subject matter which was originally presented in Claims 8, 20 and 32). In this regard, there is no teaching, suggestion or motivation found in the cited references to construct the solid-state charged particle detector in this manner. Thus, even the combined references do not read on independent Claims 1, 14 and 25 in such a way as to render the claims obvious. Accordingly, the examiner's rejections under 35 U.S.C. § 103(a) have been traversed.

Accordingly, Applicant respectfully requests that the examiner withdraw the rejections under 35 U.S.C. § 103(a).

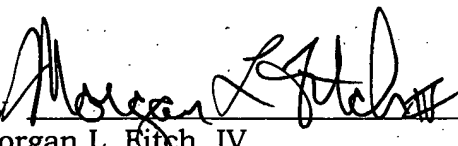
### **Summary**

In view of the amendment of independent Claims 1, 14 and 25, the amendment of Claim 2 which depends from Claim 1, Claim 15 which depends from Claim 14 and Claim 26 which depends from Claim 25, the representation of Claim 10 which depends from Claim 1 and Claim 22 which depends from Claim 14, the cancellation of Claims 3-9, 11-13, 16-21, 23-24 and 27-32, without prejudice, and the arguments presented herein, it is believed that the above-identified patent application is in a condition for the issuance of a Notice of Allowance. Such action by the examiner is respectfully requested. If, however, the examiner is of the opinion that any of the drawings or other portions of the application are still not allowable, it will be appreciated if the examiner will telephone the undersigned to expedite the prosecution of the application.

Please charge any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 16-1910.

Respectfully submitted,

PITTS AND BRITTIAN, P.C.

By   
Morgan L. Fitch, IV  
Reg. No. 28,413

PITTS AND BRITTIAN, P.C.  
P.O. Box 51295  
Knoxville, Tennessee 37950-1295  
(865) 584-0105 Voice  
(865) 584-0104 Fax